DOCUMENT RESUME

ED 046 127 EA 003 255

AUTHOR Warden, Eric; Leidich, Paula B.
TITLE An Adaptation of Variable Scheduling to the Program of a Small Junior High School.
INSTITUTION Michigan Univ., Ann Arbor.
PUB DATE 30 Jun 69
NOTE 44p.

EDRS PRICE EDRS Price MF-$0.65 HC-$3.29
DESCRIPTORS *Flexible Scheduling, *Schedule Modules, Student Attitudes, Teacher Attitudes, *Time Blocks

ABSTRACT

This paper records one small school's adaptation of variable scheduling and the reactions of the school's staff and students to one year of the schedule's operation. The purpose of this experiential paper is to show how one school staff can cooperatively adapt a concept such as variable scheduling to its own needs, rather than to provide a blueprint for others to follow, without devoting major amounts of time or investing in computers or other costly equipment. Examples of forms used in the program are provided. (Author)

AN ADAPTATION OF VARIABLE SCHEDULING TO THE PROGRAM OF A SMALL JUNIOR HIGH SCHOOL

University School
The University of Michigan
June 30, 1969

by Eric Warden
and Paula B. Leidich

FOREWORD

This is an attempt to record one small school's adaptation of variable scheduling and the reactions of the school's staff and students to the one year of the schedule's operation. Ample detail is given so that our program could be replicated by anyone wanting to do so. However, the purpose of this paper is to show how one school staff can cooperatively adapt a concept such as variable scheduling to its own needs, rather than to provide a blueprint for others to follow slavishly.

The reader quickly will notice that the tone of this writing is subjective. Although we have attempted to be objective about our experiences, we were so closely involved with the system that writing in the third person would be presumptuous and preposterous. We feel we have been able to give greater insight into the school staff's decisions and actions through the use of the subjective; and since this is an experiential--not an experimental--report, we trust the reader will not object to our approach.

Although the University School is closing--due to factors other than adoption of a variable schedule--members of the school staff remain willing to discuss its operation upon request.

We would like to acknowledge the assistance of Dr. Lester Anderson, Dr. James Bierden, Dr. Robert Fox, Dr. William Mills, Mr. Gene Scholes, Miss Carol Sheffer, and Dr. June Wilson in the preparation of this report and to extend recognition to the other members of the University School staff, without whom this innovation would not have been possible.

Eric Warden
Paula Leidich

June 30, 1969

Is there a reasonable way for a small school to take advantage of modular, flexible scheduling without devoting major amounts of staff time or investing in computers or other costly equipment?

This question faced the staff of University School when deciding to try to adapt variable scheduling to the program for grades 7, 8 and 9.

The staff finally developed a system which was compatible with the particular needs of the school. For many years prior to instituting this schedule, the faculty and administration had considered the value of a flexible schedule to meet the individual development patterns of students in early adolescence. The staff drew upon these prior investigations in developing its flexible schedule. Two ingredients that personalized the final product were the small size of the student body and strong faculty involvement in planning. The school had in total about 120 students which allowed the staff to consider particular needs of particular students. In addition, in the spring before initiating the schedule, the faculty met for daily two-hour sessions over a period of several weeks in order to tailor school resources to student needs.

The final decision, then, was reached only after thorough examination of the school's philosophy and purpose, an evaluation of available resources, a comprehensive reading of literature on variable scheduling, and an examination of schools where variable scheduling had been tried with differing success.

RELATING VARIABLE SCHEDULING TO GOALS

Probably the key to the philosophy of University School is emphasis on the individual. The school's program is intended to provide each student with opportunities to grow in accordance with his abilities and interests. To achieve that end, teachers are provided with voluminous information on each student; and they attempt to stimulate and encourage youngsters as distinct personalities. Our investigation of variable scheduling showed that it could further individualize education and help us achieve other desirable goals. This statement from Swenson* is a typical list of the challenges variable scheduling can help meet:

*Gardner Swenson, p. 12 in Providing for Flexibility in Scheduling and Instruction, Prentice-Hall & Co., 1966.

1. Duration and frequency of class periods should reflect the importance and complexity of the subject. All classes need not meet the same number of periods per week or the same amount of time each day.

2. Students learn at different rates of speed.

3. Youngsters grow physically, emotionally, and intellectually at varying rates throughout the school year. Thus, the school program must be flexible enough to accommodate the changing development of each youngster.

4. The principal should give teachers the control of time.

5. Teachers possess different and varied abilities. Not all teaching jobs need the same skill, preparation, or time allotment.

6. Students are capable of personal responsibilities and can make mature decisions.

7. Time allotments, methods of teaching, student grouping, and teachers' and pupils' activities are the responsibility of teachers and counselors, not of the administration. Professional teachers, after all, are trained in the area of curriculum and instruction. Hence, they should be allowed to determine group abilities, units of instruction, amount of time needed to accomplish objectives of the unit, and the facility best suited to the method of instruction.

8. Learning is more important than teaching; learning can take place without the teacher. Students can learn from each other or independently.

9. Substantial improvement must take place in the instructional program; the teacher has the obligation to innovate and to create ways to improve instruction.

After months of staff investigation and deliberation, we decided to adapt variable scheduling. This statement* was incorporated into a student handbook:

> In order to give students more individual attention both in counseling and in classes, in order to better plot and serve individual differences in students, in order to increase communication in every phase of our operation, in order to increase efficiency in learning, in order to better help students organize their time, in order to more adequately insure each student will become self-activating and in order to create an atmosphere that will encourage creative solutions to problems of the school and student, the University School has created and is in the process of initiating a flexible-modular schedule.

*Planning Your Next Year in School, a booklet prepared by the University School staff at the University of Michigan, 1968.

DEFINING TERMS

Many of the terms associated with variable scheduling have become vague through imprecise use. Before considering the adaptation in variable scheduling that was utilized at University School, it is necessary to define terms as we used them:

1) Modular scheduling divides the class day into several units or modules typically about 20 minutes each. As the name implies, the modules are stacked into the most desired arrangement, according to the needs of instruction. Thus, some courses that desire to meet less often than daily but for extended periods of time -- particularly those with get-ready and clean-up time -- might choose to meet two or three days a week in sessions of two, three, or even four modules. Industrial arts, home economics, science labs, physical education, orchestra and art frequently chose this option. Conversely, some courses such as foreign language and mathematics may need shorter, more frequent meetings so that drill does not become burdensome or so that instruction can be given in shorter segments. These classes might meet daily for one or two modules a day. It is even possible to meet more than once a day, if desired.

2) Flexible scheduling permits variance from day to day in class scheduling. In this case, one course might receive greater amounts of time during one week than another, according to the needs of instruction and of individual students.

It is important to note that a modular schedule is not necessarily a flexible schedule; a modular schedule can be established that is as rigid from week to week as any six-period-per-day schedule. The only difference under modular scheduling is that the periods are shorter, many classes meet for multiple periods and not all classes need to meet every day. Conversely, a flexible schedule is not necessarily modular. A flexible schedule can be arranged in which all periods are of equal length. Obviously, either system can be advantageous, but the staff of University School believed that the best schedule for our needs should have some aspects of both. This combination of modular and flexible schedule is termed variable scheduling.

ADAPTING VARIABLE SCHEDULING

The smallness of University School at first made the adaptation of variable scheduling seem impossible. Although seventh, eighth and ninth grades had fewer than 50 students in each and our staff was of adequate size, the staff was constantly occupied in the school's additional functions as a training station for practice teachers, an observation post for hundreds of visitors, a resource for methods classes, and a research haven for not only the School of Education, but such diverse University divisions as Dentistry and Psychology. These demands upon our staff required that the management of any system of variable scheduling require a minimum of staff time. And since our other resources were equally limited, there could be no major investment in additional equipment or personnel. We knew if we found a method for using variable scheduling we would have to find one that met our needs precisely and economically.

These were some of the decisions that had to be reached by the University School staff:

How long should a module be? Many schools have adopted a 15 or 20 minute module. Allowing for passing time, the 15 minute module provides these class lengths:

1 module -- 10 minutes
2 modules -- 25 minutes
3 modules -- 40 minutes
4 modules -- 55 minutes
5 modules -- 70 minutes
6 modules -- 85 minutes
7 modules -- 100 minutes
etc.

Our staff decided on a longer module of 25 minutes. The alternatives for class length thus were:

1 module -- 20 minutes
2 modules -- 45 minutes
3 modules -- 70 minutes
4 modules -- 95 minutes
etc.

We decided that periods of under 20 minutes would be desired so infrequently that they were not worth the constant inconvenience of class-changing, attendance-taking, and schedule paper-work. On the other hand, the 25 minute module still provided reasonable alternatives for class length.

How many modules should there be in a day? We wanted to offer as many 25 minute modules as possible so that the schedule would be manageable and adaptable. Therefore, we slightly lengthened the school day and incorporated a former activity period; we also replaced the homeroom period with a five minute attendance-taking and follow-up period. Our school day of 8:25 a.m. to 3:10 p.m. provided 15 modules plus lunchtime.

Do all classes need the advantages of a totally-flexible schedule from day to day or week to week? Our staff answered negatively. We felt that the basic operation of required and elective courses could well be done in a modular but non-flexible program. The greatest need for flexibility was in providing time for extra help, enrichment activities, extra lab work, remedial assistance, special projects, and individual contacts. Flexible scheduling was adapted only to these needs. We agreed that perhaps non-flexibility in the basic program provided a desirable stability for our junior high age youngsters and avoided unnecessary confusion and paper-work. In any case, as desirable as a total flexibility of the school schedule might be, it was certainly beyond our resources and possibly beyond our needs. Given a choice between an ideal program we could not have and a modified, practical program we could have, we chose the latter.

Given the use of modular, non-flexible scheduling for the basic program of instruction, how many modules a week should a course meet? Accustomed to a traditional schedule, our staff realized a great temptation to have each course meet two modules a day, five days a week. Of course, in effect, this would lead into the traditional schedule and provide the students with no uncommitted modules for flexible scheduling. To force our thinking into new molds, we arbitrarily set a maximum of eight modules a week for each full-credit class for the first year's operation. Thus, depending upon a student's course elections and grade level, he might have from 5 to 25 uncommitted modules a week. The staff believed it was necessary for a student to have gradual experience with the schedule to learn to use his uncommitted modules wisely. Therefore, we provided maximum guidance for the seventh grade. Assuming that older students had gained experience with the schedule, they generally had fewer required classes and therefore opportunity for greater choice in their schedules. They therefore also had opportunity for the greatest number of uncommitted modules.

What could a student do with his uncommitted modules? Our staff felt that a choice of "laboratories" would offer the best opportunities for students to have extra help, enrichment activities, extra lab work, and special projects. Although adjustments were made in the laboratory schedule from time to time, it, too, was basically a fixed schedule. Flexibility entered our scheduling in that the student could choose each week from among the laboratory offerings available during his uncommitted modules. This is a summary of regular laboratories offered by the school; it does not include individual-help sessions or special, temporary labs:

NAME OF LABORATORY	SERVING GRADES	NUMBER OF MODULES OPEN EACH WEEK
Art	7, 8, 9	16
Biology	9	18
Boys' Physical Education	7, 8, 9	14
English	9	arr. (avg. 20)
French	7, 8, 9	15
General Music	7, 8, 9	8
German	7, 8, 9	3
Girls' Physical Education	7, 8, 9	5
Home Economics	7, 8, 9	18
Individual Learning Center	All, incl. el.	34
Industrial Arts	7, 8, 9	19
Instrumental Music	7, 8, 9	18
Library	7, 8, 9	73
Mathematics	7, 8, 9	21
Project Room (Core)	7, 8	34
Science	7, 8	14
Typing	8, 9	12

(A student lounge also was available. Generally, students had the opportunity to sign into the lounge for one module a day.)

To serve students best, some teachers established special arrangements for labs, such as a requirement of two or more consecutive modules in labs having set-up and clean-up problems, or teachers' permission for special-purpose labs, or "winds only" and "strings only" labs in orchestra.

Was lab attendance optional or required? Generally, classroom teachers could specify which labs were required, although attempts were made to keep required work for an entire class close to the eight-module maximum. However, every student was required to sign into one lab or another during each of his uncommitted modules. And once a student had committed himself to a lab, he was required to attend. Our staff noted some instances in other schools in which the change from a lock-step schedule to a very permissive, variable schedule had proved too sudden a change and apparently had negative results. We felt at that time that in general our student body was not mature enough to make spur-of-the-moment decisions on whether they wanted to attend. Absences from lab were treated the same as absences from class.

How can students be encouraged to make wise decisions about the use of their uncommitted modules? We realized that a strong counseling program was essential to success. At University School, classroom teachers always had been the first line in the counseling program. In the past, certain classroom teachers were appointed as homeroom teachers for groups of students. These teachers in turn would, if necessary, call on the specialized services of the administration or pupil guidance and psychological services. With the adoption of the variable schedule, every full-time teacher assumed the role of counselor to seven or eight students. Consequently, a close relationship between counselor and student developed and allowed the greatest attention to each student's needs.

The fixed schedule provided for each small group of students to meet with their counselor two modules each week primarily to plan lab selections for the following week. The decision as to which lab to attend was made jointly by student and counselor, with advice from classroom teachers and others.

What is a reasonable teaching load under a variable schedule? This is always a difficult problem. However, because of specialized functions of the University School, teachers previously had student contact for four of six periods a day. As an initial guideline, approximately the same time ratio, providing teachers with student contact for 52 of the 75 modules in a week, was maintained. Since each teacher served as counselor,

two of the 52 modules were devoted to counseling duties. We also realized the necessity for increased faculty contact during establishment of the variable schedule and agreed to daily faculty meetings one-half hour before school opened. We were able to conduct nearly all faculty business in this time and to eliminate many meetings as the year progressed.

In view of difficulties with variable scheduling in some schools, how could we secure parental acceptance of the schedule? As soon as decisions were made, our administration informed parents about the goals of modular scheduling and how we had taken precautions to assure its success. There can be no denial that parents of University School students are not a typical group, inasmuch as they have chosen the University School and are accustomed to research activities in the school and are uncommonly active in school affairs. However, careful parent and student involvement in preparing the schedule is a logical step in any school's operation.

In summary, these practical decisions were made from operating principles:

Our school would adapt variable scheduling so that basic instruction in required and elective courses would be given in a fixed, modular schedule, with each course meeting a maximum of eight modules a week. Our school day would consist of 15 modules of 25 minutes each. We would establish an adaptable but relatively fixed schedule of laboratory experiences from which students might choose each week.

Thus, every student had a fixed schedule of classes to attend each week. Once his course elections were made, that schedule did not change. Depending on the student's course elections and grade level, he might have from 5 to 25 uncommitted modules each week. He could commit each of these uncommitted modules to any of the available laboratory offerings. His decision was based on his own preferences, information from the classroom teacher, and the advice and consent of his counselor. The counselor system was the heart of the operation, with every teacher serving as a counselor.

ESTABLISHING OUR OWN PLAN

The next task was the development of these decisions into an administratively-feasible plan.

Before school opened - After students had made their course elections, our school staff developed a master schedule for the fixed program. This was accomplished in traditional fashion, first placing likely-conflicting single-section classes and multiple-module classes into the schedule and gradually working up to the placement of multiple-sectioned, few-module classes. Of course, as in the building of any schedule, the availability of staff and facilities had to be considered. [A portion of such a fixed schedule is shown in Figure 1.]

Then a breakdown was made of what students had uncommitted modules at a given time. [See Pupil Availability Chart, Figure 2.]

Using information on pupils, staff, and facilities available, and preferences teachers had given regarding numbers, frequencies, and times of labs, a laboratory schedule was made. It is important to note that even during times when very few students were available, an attempt is made to provide them with some choice of labs. Note, too, that the final, printed schedule had to be arranged to facilitate the student's choices of labs on the basis of what the lab offered. The number in a cell indicates the room of the lab. The letter indicates:

c--two or more consecutive modules required
p--permission of instructor required
w--wind instruments only
s--string instruments only
etc.

[See Laboratory Schedule, Figure 3.]

For convenience, teacher-locater schedules and room use charts also may be drawn up from these two schedules.

The one remaining step provided the greatest challenge: How can student lab choices be facilitated without undue investment in time or equipment? We began this process by determining who needed to be informed of the student's lab decisions:

1) The lab instructor needs to know which students to expect when, especially since attendance records are to be maintained rigorously.

2) The student himself needs a record of his decisions.

3) The student's counselor needs a longitudinal record of the student's decisions so they can be reviewed with appropriate people. The counselor also may need to be able to locate the student.

4) The office locater file needs information on a student's whereabouts.

Thus, we developed a large, four-copy form which provided spaces for the student to indicate his name and room number for each of his uncommitted modules. The top copy was perforated so that it could be torn apart and distributed to appropriate lab instructors. The remaining copies remained whole and would show the student's module commitments in their entirety. [See Weekly Schedule, Figure 4.]

Weekly Operation - To make his choices, each student had to have one of these blank forms, a copy of his individual fixed schedule, and a copy of the laboratory schedule. He also needed to be aware of temporary schedule changes, such as an assembly or temporary closing of a lab, and information from his classroom teacher and counselor.

Our office found it fairly simple to provide copies of each student's fixed schedule. Use of a photo-copier made it easy to prepare large batches of commonly-found schedules and to add the student name and elective courses by hand. In turn, three copies of each student's fixed schedule were made--one for the student, one for his counselor, and one for the office locater. [See Figure 5-A].

To inform counselors and students of schedule variations and to tell them of special attractions in labs and other activities, a special staff bulletin was prepared as needed.

When classroom teachers desired to see students for special purposes, they sent a Request Slip [Figure 5-B] to the student through his counselor.

Of course, the counselor was able to make his recommendations as the student prepared his schedule.

We selected the first module on Monday morning and a late-afternoon module on Thursday for management of the variable schedule. One reason we chose the first module Monday to distribute previously-completed schedules was so students would not lose their copies of the schedules over a week-end. However, the primary reason was that it seemed wise to start a week with a counseling session. The Thursday afternoon session was selected for making lab choices for the ensuing week, since that allowed the latest possible information to be used in schedule planning while providing the office a day for processing.

OPERATING OUR PLAN

This chronology indicates more specifically how the process was completed:

Each Monday session represents the termination of the previous week's selection process and the beginning of the next week's. At each Monday session, the student is given his own copy of the schedule he planned last week for use this week. He also begins the routine part of the process of selecting for the next week by taking a new weekly schedule quadruplicate form and crossing out the modules that were already accounted for in his fixed weekly schedule and writing his name in the uncommitted module blanks [as in Figure 6].

By Thursday noon, the counselor would have received all relevant information to planning the following week's schedule: staff bulletin, teachers' request slips, and possibly such special items as dental appointments and counseling and testing times.

During the Thursday afternoon counseling module, the pupil and counselor devise a plan for the student's lab choices, and the room numbers are added to his weekly schedule form. [See Figure 7.]

After a final checking by the counselor, the pupil removes the top copy of the four copy form. (The counselor retains the bottom three copies intact for later use.) The top copy, which is perforated, is separated by the student into individual module slips. The student discards the crossed out slips that represent his fixed schedule. The remaining slips represent his lab choices for the week. [See Figure 8].

To reduce the task of sorting by the office, the student files his slips into a box that is divided into 75 small sections, representing the 15 modules per day, five days per week. (The counselor sees that a schedule is completed for any absent students.) When all are finished, the sorting box is checked for accurate filing and sent to the office.

On Friday, an office clerk combines the sorting trays so that all the slips for the school are in one tray, sorted according to the 75 modules in the week. She then takes each day-module stack and sorts it according to room numbers. She then paper-clips each day-module-room stack. As she works, she red-flags any obviously incorrect schedulings, such as a student assigned to a closed lab. The clerk distributes the stacks of slips, including red-flagged ones, to the appropriate lab teachers.

The lab teachers and counselors (who in actuality are the same group of people) meet before counseling period Monday morning. They relieve labs that are over capacity or that have been signed into in error. (This procedure is followed: The instructor returns the slip in question to the counselor. The counselor selects an appropriate open lab and alters the module slip and gives it to the teacher of that lab. He also alters the still-intact bottom three copies of the weekly schedule form.)

In the Monday first-module counseling session, the pupil removes his copy from the three-copy pack. One copy is retained by the counselor for his records. The remaining copy is sent to the office for the locater file. (If a student is absent from this counseling session, the counselor also sends the student's copy to the office. When the student is re-admitted, he receives his schedule at the office, thus not interrupting the counselor's classes.) The remainder of the Monday counseling session is spent in preparing a weekly schedule form for use in the next Thursday session, and in other routine administrative matters.

PLANNING HELPFUL DESIGNS

Some practical considerations in designing the large form can help the program run more smoothly:

The use of no-carbon-required paper eliminates the use of carbon paper or the tedious re-copying of information.

The use of distinctive color for each sheet of the form helps avoid confusion in the distribution of sheets, and it adds virtually no cost in printing. Since the individual module slips will receive the greatest handling and scrutiny, we have used the top sheet for this purpose and chosen white for its color. Subsequent sheets are distributed according to the need for clarity: the next copy (yellow) for the counselor, and next-to-bottom (blue) for the office locater file. One exception to this principle is the fact that the bottom sheet (pink) is given to the student. Having the student's copy the bottom one helps assure that the student will press down hard enough with his pencil to make all copies readable.

Having standard binder-holes drilled into the top of the form is a convenience for student and office.

Through careful planning, the module-slips can be made distinctive so as to help avoid sorting errors. We have designed the slips so that the

perforations and borders do not coincide. [In this illustration, Figure 9, dotted lines represent perforations.]

These variations in perforation provide for a variation in size of the slips and in the positions of borders, making a misplaced slip quite obvious. [Figure 10 illustrates these differences.]

Attendance - Various attendance procedures can be utilized, but at University School we found this to be simplest:

Throughout each class day, the teacher checked attendance by:

1) checking module-slips in labs. If a student were absent, the teacher wrote "A" on the slip; if the student were tardy "T".
2) checking class roll book in fixed-schedule classes. The teacher noted absences and tardinesses on a standard absence form [Figure 11-A].

These slips were gathered by an attendance clerk, who tallied absences on a form, which was duplicated for all counselors [as in Figure 11-B]. The counselors and administrators cooperatively followed up absences.

ANSWERING SOME QUESTIONS

Observers of the administrative operation of the University School modular schedule frequently asked these questions:

How long is actually required for students to make their lab decisions? After the first few weeks, students were capable of completing all steps in the process in just the one Thursday module. The Monday morning module frequently was devoted primarily to other administrative matters--or to an extended assembly period or other activity--once roll was taken and schedules were passed out.

How much clerical time is required for sorting the slips? As long as the first step of sorting was done carefully in the counseling session, the office clerk required only one-half to three-quarters of a day for the final sorting and distributing of our 2,500 slips. If a tally is desired on lab attendance, the job can take a full day. The number of slips is an important factor: using somewhat longer modules permits a reduction in the number of modules in a day and therefore the number of module slips.

Is it difficult to initiate the system? We were delighted at how quickly the students grasped it. Although we had visions of mass hysteria on the first day, it simply did not happen. Teachers adapted more slowly. Undoubtedly, good orientation sessions helped. It is important to remember that students must complete a lab schedule early on the first day of orientation so that the slips can be distributed for the first full day of actual classes.

Can a determined student beat the system? Of course! Nobody has a perfect system yet. Ignoring such obvious ploys as snitching lab slips from teachers' desks or absence slips from doorways, this system provides only two opportunities for a student to avoid being marked absent when he skips. One occurs if he simply pockets a lab slip instead of filing it. The other happens if he misrepresents his fixed schedule--that is, if he crosses out a time when he actually should sign for a lab. He also can get a "friend" into trouble by filing a bogus lab slip for him, causing him to be marked absent. Any of these occurences can be stopped by an alert counselor. We actually had little difficulty with these problems, since the choices are made considerably in advance, and skipping appears to be more of a spur-of-the-moment decision. It also may be that the fact that a student has chosen a lab may make skipping less attractive.

Some Problems and Solutions - Three problems developed that were difficult to solve:

Since library visits were made entirely through the variable schedule, often for one module at a time, and since we had decided to be scrupulous in taking attendance, the librarian found taking attendance to be quite time-consuming. Various solutions were considered, including having student library club members take roll, using an honor system, creating an "open" library, or limiting some students' time in the library.

Establishing a student lounge in the schedule heightened the problem of to supervise or not to supervise. Many teachers and responsible students resented faculty supervision, but some irresponsible students--and questions of faculty responsibility--made supervision important.

Possibly the greatest difficulty arose because the students wanted even more freedom than the schedule provided. Under changing pressures of work, some students wanted to alter their lab choices in mid-week. Caught between the desires to be flexible and to avoid overcrowding labs and complicating attendance procedures, we discouraged such changes by

requiring the student to get his counselor's approval. It was also helpful for teachers to announce the next week's workload in advance of the counseling session.

On the other hand, some anticipated problems did not occur:

Not only did students rapidly adapt to the variable schedule, they even solved many scheduling problems informally. Although the staff had anticipated that certain popular labs would be overcrowded, this actually happened rarely. Students soon realized that if they signed into an overcrowded lab, their counselors would re-assign them; and, to avoid this, they learned which labs were usually available and signed into them. On probably no more than a dozen occasions were students re-assigned because of overcrowding.

Similarly, students learned that counselors would re-assign them if they accidentally signed into a closed lab. To preserve their own right of choice, most students were quite careful in checking the lab schedule.

Rarely did a student misuse a lab by attending with no particular learning purpose in mind. But when this did happen, at the morning faculty meeting following the incident the lab teacher would inform the student's counselor. In counseling session the counselor would then discuss the situation with the student, and together they would decide whether for the next week the student could make use of that lab or would spend time more constructively in another lab. On the basis of their decision, the student would draw up his schedule for the next week. This follow-up procedure helped keep lab misuse to a minimum.

In some instances, the variable schedule prevented class interruptions that seem almost traditonal in some schools: For example, some conscientious students were able to schedule dental and medical appointments during uncommitted modules, when such appointments could not be scheduled outside school hours. Some modules when all students were uncommitted were utilized for assemblies. Some activities such as drama club and yearbook were able to have work sessions on school time when many of the groups' members had uncommitted modules.

LABORATORY USE

The subject of laboratory use is a crucial one for any school that desires to initiate a modular schedule as we conceived it, and orientation of teachers must stress this point if the schedule is to succeed. The basic innovation in our modular schedule lies in the labs. Here lies the

opportunity for remedial work or enrichment in a small group. Each individual can receive more teacher attention than could be given in the classroom. If the secret of a successful modular schedule lies in lab use, the greatest possibility of failure also lies here. It seemed to us after a year of experience that successful labs at the junior high level contain one or both of two elements: learning materials, planned programs. However, the schedule can also help the rare individual who works best without structure. While many younger junior high students seem to require situations with some structure, very few students work well at this age in relatively unstructured circumstances. For instance, some of our eighth grade teachers believed that few of their students actually worked better in quite unstructured circumstances. It is, unfortunately, difficult to discover these individuals, and the process of identifying them is beyond the scope of this paper. However, once these individuals are identified, the variability of a laboratory schedule goes far to meet their own particular needs. The teacher can free these students from specific assignments and allow them to develop their own projects and do their research during lab time. This points out what can be accomplished in laboratories even without teacher-prepared materials or programs. However, considering the staff, faculty, orientation, and support we provided, most of our junior high students did not function well with so little structure. In such a situation as ours, materials and programs afford the suggestive and guiding structure which these students need in lab.

Materials for projects are limited only by the teacher's imagination. For instance, the assignment of making a visual statement of a social problem can use old magazines, paper, paint, boxes, egg cartons, or countless other items. A diversity of materials encourages students to express themselves in innovative ways. On the other hand, some materials commonly found in school can be used to a greater degree of success in a student's variable laboratory schedule. Programmed materials, for instance, can be excellent for teaching skills, and tapes help in the study of languages. However, it is generally agreed that individual students have individual optimum time periods for working with these materials. Labs make it possible for one child to work a short time and then do something else and for another child to work for a longer period.

Furthermore, since students are not limited to using these materials in the way in which they have been assigned by the teacher, a student can use such items in an individual way. He can choose to make his own booklet of programmed material in an area he knows well in order to help other students learn what he knows. The very construction of such a booklet can reinforce his own understanding of the area. Another student can find the use of tapes so helpful in the study of languages that he might use tapes to study his native language.

Just as a variety of materials can encourage individual or group study, so can programs. Tutoring in remedial work or for enrichment can be conducted with an individual or small group. A tutor can be a bright student or a student-teacher, as well as the teacher himself. Laboratories offer an opportunity for para-professionals or semi-professionals, such as student teachers, to assist in the teaching process. Programs could, for example, be assigned reading, discussion of investigations, group position papers, or a play rehearsal. The progression among these types of programs moves from individual work, to mildly structured group work, to highly structured group work.

A significant part of a student's relationship to ideas comes through his manipulation of things and his interaction with persons. In a lab, a student can manipulate materials as well as explore human interaction through group programs and processes. The diversity of experience and freedom to explore which a lab affords the student can enhance his understanding of things and persons. Thereby, a laboratory can encourage the growth of a student's relationship to ideas.

INTEGRATION OF CLASS AND LAB

It is difficult to evaluate the benefits of University School's adaptation of fixed and variable scheduling after only one year of operation. It is possible to see, however, that unique opportunities for learning were developed under the schedule.

Some teachers used the schedule to facilitate task-oriented groupings of students, similar to recommendations in the Trump Plan. In one case, a teacher organized the class into lecture, recitation, required small-group instruction, optional small-group instruction and enrichment, and individual contacts.

The lecture and recitation groups were placed into the fixed schedule. During the two lecture periods each week, the teacher conducted activities which required little or no interaction -- films, recordings, lectures, tests, impromptu compositions. This eliminated the repetitior of tasks that could be done for the entire group at once, and it permitted the entire group to participate in activities which could be scheduled only once, such as the appearance of a guest speaker. On another day, the class was divided into three standard recitation sections. This provided for limited interaction and was most suitable for such activities as teacher-directed discussion, the return of tests, and review sessions.

The remaining three forms of pupil contact were arranged through the flexible schedule. Required small-group sessions typically involved three to ten students for one module on each of two days. These groups were suited to informal discussions, presentation of student speeches, book-selection guidance, additional explanation or repetition--in fact, practically an unlimited number of activities. Membership in the groups could be haphazard, pre-planned by the students, who enjoy having class with friends, or pre-planned by the teacher, according to the activity, level of difficulty, the specific work or persons involved, pre-test scores, and innumerable other factors. The schedule allowed such optional activities to be conducted as the making of a movie, discussing current books and preparing a slide-tape presentation on the school's annual outdoor education experience. The variable schedule also provided for students to get individual help within the school day. Either the student, teacher, or counselor could initiate individual help sessions.

These brief examples indicate other unique opportunities that developed under the new schedule:

One French teacher established a weekly French cooking group in which students would cook and consume onion soup, fondue, snails or other items of French cuisine.

Two teachers established semi-weekly "Sock It To Me" times in which such controversial issues as drugs, pre-marital sex, Russian education and the hippie movement were discussed freely.

During one afternoon prior to an annual, week-long outdoor education experience, one teacher used primarily uncommitted modules of students to take a leader-group to a nursery to study tree-planting.

The girl's physical education instructor started special groups to work on posture, figure and weight control.

A science teacher developed animal experiments in which students utilized uncommitted modules to feed their animals and record data.

One teacher found a way to use labs when her class produced a full length play. The students did all the work, including costumes, sets, lighting, and acting. The costume committee needed special guidance from the home-economics teacher as well as use of her machines. Since the home-economics teacher held labs during the class time of the English class, the costumes were made during class. The costume committee carried out its responsibility under the direction of a more specialized teacher.

For junior high students, adolescence can be a lonely time. Often children who become introspective long before their peers feel there is not one to whom they can talk of their private profundities. One teacher hand-picked seven of these students and brought them together for a voluntary discussion period two modules each week. Students were free to drop out whenever they wished and come as often or rarely as they wished. One girl dropped out after three meetings. None of the others missed more than once. The students even met when the teacher could not atterd. Topics were never scheduled; they rose spontaneously from the students. The teacher was gratified by the companionship that sprang up among these six individuals who had been virtually unknown to one another as personalities before the seminars.

MEASURING ATTITUDES BY QUESTIONNAIRE

Preparation - Early in September, 1968, a committee from the faculty of the school was formed to evaluate the adopted schedule. The committee consisted of four members, about one fourth of the full-time members of the University School junior high faculty, and was under the direction of the University School research assistant.

When the committee first began drafting the evaluative questionnaire on the "modular schedule"* it's concern was to explore every area of major interest in establishing a modular schedule at the junior high level. These areas related to our own situation, of course, but we tried to

*Although our schedule is more properly called "variable," students adopted the term "modular." Thus, throughout the questionnaire itself and this section of the report, the word "modular" has been used.

determine areas that would be of universal importance to any junior high school staff about to implement a modular schedule. The faculty, administration, and students all voiced areas of major interest from its own view of the modular schedule. Upon examination by the committee, these considerations often displayed relevance for all three groups involved. We noticed that questions fell into three categories: philosophy, methodology, and operation.

The purpose for writing an attitudinal questionnaire was to determine whether two of the several goals of the faculty and administration had found fulfillment in the modular schedule. In operational terms, these goals were (1) to offer greater opportunity for choice to the student than he could have under the traditional junior high schedule and (2) to strengthen the student-teacher relationship. We felt also that the results of the questionnaire would direct faculty and administrative attention to strengths and weaknesses that we did not recognize or had merely suspected.

The questionnaire in its final form represented an attitudinal survey rather than a factual study of our new schedule. [See attached questionnaire.] Factual material was available to us without recourse to a questionnaire. The school office retained copies of teacher schedules which showed modules spent in classroom activities, in laboratory activities, and in free time. Also on file were all student permanent schedules, those schedules of class periods which only changed with the quarters of the traditional academic calendar. In addition, a copy was kept of each student's weekly choice of laboratories to fill his unscheduled modules. We thought we had available adequate information to determine exactly how a teacher or student used his time in school. What we did not know, and wanted greatly to discover, was whether teachers and students felt that they were using their time in valuable ways under the modular schedule.

This attitudinal survey served two functions. On the first consideration, we were simply asking teachers and students to give their attitudes toward the new modular schedule. The second comparative function of the questionnaire was to note any attitudinal differences between the reactions to the modular schedule of those persons accustomed

to a traditional junior high schedule and the seventh graders who had never experienced junior high school.

As we began to compile items for our survey, we faced the problem of how best to register accurate emotional reactions to the modular schedule. We realized our own limitations as non-professional test writers and expected to make some mistakes. After much debate, we finally settled upon a five-category continuum of response. We avoided such value-oriented terms as "good idea" or "bad idea." Finally, we settled on calling the two extremes (1) "strongly agree" and (5) "strongly disagree." The next two points came easily (2) "agree" and (4) "disagree." We eventually chose to call (3) "undecided" rather than "no opinion" so that we could encourage the persons being surveyed to agree or disagree on any subject where they had enough information and inclination to form an opinion. Anyone who has ever observed the results of a survey with an attitudinal continuum knows the discouragement presented by rows of middle responses. The evidence presented by such a pattern of responses is inconclusive.

Certain items asked the respondent whether he liked one experience better than another, for instance, a class better than a lab. The response to questions of this nature can be checked by the appearance of the inverse elsewhere in the survey. For example, the inverse of liking a class better than a lab would be liking a lab better than a class. Of course, if the respondent did not show some consistence in both responses, the effect would negate his responses to both items.

When we first conceived the idea of a survey asking for personal reactions to the modular schedule, we realized we would need such data as would indicate each individual's previous experience with any kind of junior high scheduling. The questions we chose are listed in the appendix as the first page of the questionnaire. We decided names would also be helpful so that we could follow up with individual results if that seemed necessary. A long history of testing at University School makes students and faculty willing to give names.

The committee tried to avoid threatening items. Sometimes we found we could remove the threat from a certain item by rephrasing the statement. For example, we replaced the item, "I work hard under the

modular schedule" by two items "Students work hard under the modular schedule" and "Teachers work hard under the modular schedule." Obviously, in the first instance the moral pressure of the work ethic in our society would encourage the respondent to say he did work hard since his name appeared on the test. The impersonal rephrasing evokes a more honest opinion. Of course, all threats to all people could not be eliminated, but we felt the final form of the questionnaire was relatively free from the contamination elicited by the desire to protect one's image.

We determined the length of the questionnaire in an arbitrary way. We felt that fifty items could easily be answered within half an hour by all persons so that we would not have to establish a time limit. The time needed to answer fifty items could be made available during a counseling period and, therefore, all teacher-counselors and students would be able to take the questionnaire at one time. This method of administering the survey would eliminate the contamination which would result from discussion of the questionnaire between those who had already answered it and those who had not. We felt that the individual's immediate response to an item would be a visceral reaction. Furthermore, fifty items could be answered by most people without eliciting the fatigue that eventually sets in even in the most relaxed testing environment. Once we had determined to use fifty items, we sifted through all our statements and chose the ones we felt to be the pithiest. We administered the questionnaire twice to examine early and late reactions to the modular schedule. The survey was made in October and May. Teachers were given an extra page for open ended comments.

Analysis - When we computed the results of the questionnaire after the October administration, we computed the results by hand. On the second tabulation we used a computer and found the results more quickly, accurately, and satisfactorily. In both tabulations after we had determined the raw score on each item for faculty, seventh, eighth and ninth grades, we went through the results and determined the patterns of majority responses. Our calculations were made for each of the four personnel groups. On each of the fifty items we determined how the majority (51 per cent) of each group responded. For each of the

four groups we calculated all responses of "strongly agree" and "agree" as reactions of agreement. On the other hand, we calculated all responses of "strongly disagree" and disagree" as reactions of disagreement. Responses of "undecided" were counted neither as agreement nor as disagreement. Thus, for instance, our statement that eighth graders were in agreement with item thirty-six would mean that at least 51 per cent of all eighth graders had marked either "strongly agree" or "agree." The remaining eighth graders had marked either "undecided," "disagree," or "strongly disagree." When there was no majority in either the area of agreement or disagreement on an item, we said that the majority of the members of the particular group were undecided among themselves. In this final group tabulation the category "undecided" does not necessarily mean that the majority of the members marked "undecided" for the item on the questionnaire.

Results of the Questionnaire - The results of both administrations of the questionnaire helped us determine some areas of concern regarding our own modular schedule. The faculty concurred that, in general, our questionnaire had been an effective one for measuring subjective reactions to the modular schedule. This encouraged the committee because it seemed our questionnaire held validity for our limited purpose.

The questionnaire showed that the general response to the modular schedule was favorable. The seventh grade's responses did not differ much from those of other classes'.

The committee was surprised by several items on which the ninth grade separated itself from all other students and teachers. An examination of these items revealed a consistency in regard to use of laboratory time. We discovered that only the ninth graders felt that labs were often misused or not used at all. This result of the questionnaire led us to study the problem further.

There appeared to be some difference of opinion over the possibility of scheduling extra-curricular activities in the modular schedule. The faculty and administration eventually tried to set guidelines to remedy some shortcomings in this area.

The second survey showed that the majority of students and teachers came to feel that nearly everyone worked hard under the new schedule.

Although ninth graders changed their view so that at the end of the year they felt that there was a place for adult assistance in student scheduling, the two younger grades persisted in the belief that students should make all decisions about use of their unscheduled time.

Both administrations of the questionnaire showed conclusively that students and teachers felt the modular schedule strengthened their relationship and that teachers were readily available to help students.

Over the year all student groups found that they had freedom of choice within the modular schedule.

The junior high grades of University School were closed by the Regents of the University of Michigan in June, 1969. The reason for the closing in no way related to the establishment of the modular schedule, which had been generally well received. The closing was related to University budgetary limitations which will also close the elementary grades in June, 1970. However, before the Regents voted to close the school, the junior high faculty and administration met to correct some of the shortcomings of our schedule in time for the 1969-70 academic year, which we still anticipated at that time.

Our first modification was to schedule an extra-curricular period. We chose to have all students and teachers free and available for the whole of Wednesday morning. We felt that such an opportunity would facilitate the scheduling of assemblies, club meetings, and other special activities. With this extra-curricular period falling mid-week, we felt students and their parents would regard it as a legitimate part of the academic week. We established a new requirement that all students must spend a minimum number of modules in regularly scheduled classes each week and, of course, that also established a maximum number of unscheduled modules. We had found that junior high students with more than twenty modules per week of unscheduled time tended not to use their free modules above twenty in learning-related activities. Of the maximum possibility of unscheduled modules, eight were to be spent in the Wednesday morning period in which regular labs were scheduled as well as extra-curricular activities.

SOME FINAL CONSIDERATIONS

In concluding our consideration of the University School's adaptation of variable scheduling, we would like to emphas ze three points:

First, as we noted previously, we hope that the primary benefit from our description will be that other schools may realize their capability to adapt ideas to suit their own needs. Although we are flattered when others ask to copy our ideas and materials, we are more pleased when these have provided a basis for modifications appropriate to the school involved.

Second, once a staff has decided to use variable scheduling, all must remember that the initiation of this system requires energy, patience, and more important, total commitment on the part of teachers, administrators, students, and parents. Even if some mistakes are made at first, everyone involved must cooperate to correct these mistakes and develop a viable and constructive educational system.

Finally, we must stress that a schedule is merely a device. Its value is that it may permit a school staff to reach its goals, but a schedule in itself cannot assure that those goals will be reached. To individualize instructior, increase efficiencies, promote better student-teacher relationships, encourage self-activation, or achieve other desired results, a staff must look beyond the mechanics of scheduling and within its own attitudes and actions.

FIGURE 1. A portion of a sample fixed schedule for grades 7, 8 and 9.

MON	TUE	WED
1 Counseling 7-8-9	Orchestra	Eng 9 Rec 1 Biology Lab 1 Art 8 Sec 2 Core 7 Sec 1
2 (*)	Orchestra French I Sec 1 German I Sec 1 Typing 9 Sec 1	Eng 9 Rec 1 Biology Lab 1 Art 8 Sec 2 Core 7 Sec 1
3 French I Sec 1 German I Sec 1	Orchestra French I Sec 1 German I Sec 1 Typing 9 Sec 1	Biology Lab 1 Art 8 Sec 2 Core 7 Sec 1
4 French I Sec 1 German I Sec 1	Core 8 Sec 1 PE 7 - Boys	Biology Lab 2 Art 8 Sec 2
5 Eng 9 Lecture Sci 8 Sec 1 Core 7 Sec 1	Biology Lecture Core 8 Sec 1 PE 7 - Boys	Biology Lab 2 Eng 9 Rec 2 Core 8 Sec 1
6 Eng 9 Lecture Sci 8 Sec 1 Core 7 Sec 1	Biology Lecture Core 8 Sec 1 PE 7 - Boys	Biology Lab 2 Eng 9 Rec 2 Core 8 Sec 1 Math 7 Sec 1
7		

*Note assembly option.

FIGURE 2. A portion of a sample pupil availability chart.

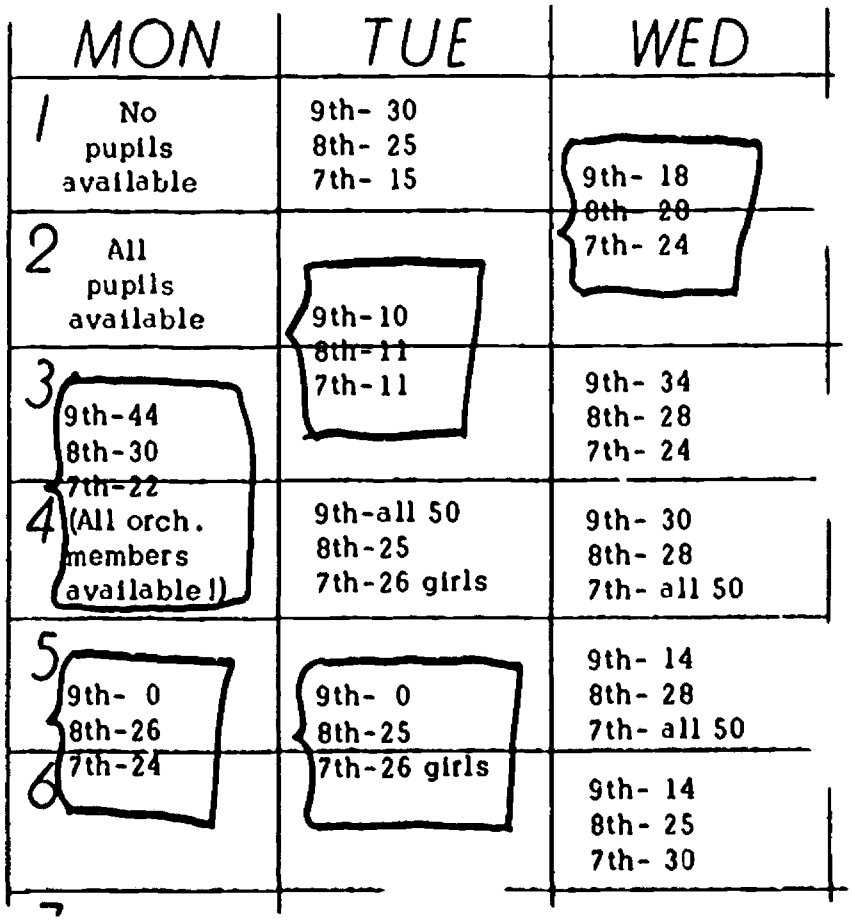


FIGURE 3. A portion of a sample laboratory schedule.

MONDAY

	1	2	3	4	5	6	7
Art			2501c	2501c	2501c	2501c	
Biology		1022	1022	1022			
Boys Phys Ed							
English		arr	arr				
French		2432				2432	
General Music		1200		1200	1200		
German		2436				2436	
Girls Phys Ed		1500c	1500c	1500c	1500c		
Home Economics		1525c	1525c				
Individual Learning		2509	2509	2509	2509	2509	
Industrial Arts					1005c	1005c	
Instrumental Music		2400w	2400w	2400w			
Library		2200	2200	2200	2200	2200	
Lounge				2442	2442	2442	
Mathematics		2203		2203	2203		
Project Rm (Core)		2436			2436	2436	
Science		1021				1021	
Typing		1203	1203	1203			

TUESDAY

FIGURE 4. Actual copy of student weekly schedule. (Printing and perforation are imperfect.)

UNIVERSITY SCHOOL — THE UNIVERSITY OF MICHIGAN

PU _____ Weekly Schedule Beginning _____ COUNSELOR _____

MON	TUE	WED	THU	FRI
1 Pupil _____ 8:30 Room _____	1 Pupil _____ 8:30 Room _____	1 Pupil _____ 8:30 Room _____	1 Pupil _____ 8:30 Room _____	1 Pupil _____ 8:30 Room _____
2 Pupil _____ 8:55 Room _____	2 Pupil _____ 8:55 Room _____	2 Pupil _____ 8:55 Room _____	2 Pupil _____ 8:55 Room _____	2 Pupil _____ 8:55 Room _____
3 Pupil _____ 9:20 Room _____	3 Pupil _____ 9:20 Room _____	3 Pupil _____ 9:20 Room _____	3 Pupil _____ 9:20 Room _____	3 Pupil _____ 9:20 Room _____
4 Pupil _____ 9:45 Room _____	4 Pupil _____ 9:45 Room _____	4 Pupil _____ 9:45 Room _____	4 Pupil _____ 9:45 Room _____	4 Pupil _____ 9:45 Room _____
5 Pupil _____ 10:10 Room _____	5 Pupil _____ 10:10 Room _____	5 Pupil _____ 10:10 Room _____	5 Pupil _____ 10:10 Room _____	5 Pupil _____ 10:10 Room _____
6 Pupil _____ 10:35 Room _____	6 Pupil _____ 10:35 Room _____	6 Pupil _____ 10:35 Room _____	6 Pupil _____ 10:35 Room _____	6 Pupil _____ 10:35 Room _____
7 Pupil _____ 11:00 Room _____	7 Pupil _____ 11:00 Room _____	7 Pupil _____ 11:00 Room _____	7 Pupil _____ 11:00 Room _____	7 Pupil _____ 11:00 Room _____

8 Pupil _____ ON 25 Room_____	8 Pupil _____ TUE 11:25 Room_____	8 Pupil _____ WED 11:25 Room_____	8 Pupil _____ THU 11:25 Room_____	8 Pupil _____ FRI 11:25 Room_____
LUNCH MON 11:50	LUNCH TUE 11:50	LUNCH WED 11:50	LUNCH THU 11:50	LUNCH FRI 11:50
9 Pupil _____ MON 12:15 Room_____	9 Pupil _____ TUE 12:15 Room_____	9 Pupil _____ WED 12:15 Room_____	9 Pupil _____ THU 12:15 Room_____	9 Pupil _____ FRI 12:15 Room_____
10 Pupil _____ MON 12:40 Room_____	10 Pupil _____ TUE 12:40 Room_____	10 Pupil _____ WED 12:40 Room_____	10 Pupil _____ THU 12:40 Room_____	10 Pupil _____ FRI 12:40 Room_____
11 Pupil _____ MON 1:05 Room_____	11 Pupil _____ TUE 1:05 Room_____	11 Pupil _____ WED 1:05 Room_____	11 Pupil _____ THU 1:05 Room_____	11 Pupil _____ FRI 1:05 Room_____
12 Pupil _____ MON 1:30 Room_____	12 Pupil _____ TUE 1:30 Room_____	12 Pupil _____ WED 1:30 Room_____	12 Pupil _____ THU 1:30 Room_____	12 Pupil _____ FRI 1:30 Room_____
13 Pupil _____ MON 1:55 Room_____	13 Pupil _____ TUE 1:55 Room_____	13 Pupil _____ WED 1:55 Room_____	13 Pupil _____ THU 1:55 Room_____	13 Pupil _____ FRI 1:55 Room_____
14 Pupil _____ MON 2:20 Room_____	14 Pupil _____ TUE 2:20 Room_____	14 Pupil _____ WED 2:20 Room_____	14 Pupil _____ THU 2:20 Room_____	14 Pupil _____ FRI 2:20 Room_____
15 Pupil _____ MON 2:45 Room_____	15 Pupil _____ TUE 2:45 Room_____	15 Pupil _____ WED 2:45 Room_____	15 Pupil _____ THU 2:45 Room_____	15 Pupil _____ FRI 2:45 Room_____

FIGURE 4. (Continued)

FIGURE 5-A. Example of individual student's fixed schedule.

Student Schedule

Student N. Student Grade 9 Co·

Module	MONDAY	TUESDAY	WEDNESDAY
8:30 1	Counseling 2532		
8:55 2		French I ↓	
9:20 3	French I 2432 ↓		
9:45 4	↓		Biol Lab 2 1022 ↓
10:10 5	Eng Lecture Aud ↓	Biol Lecture Aud ↓	↓
10:35 6	↓	↓	↓
11:00			

FIGURE 5-B. Example of teacher's request form.

UNIVERSITY SCHOOL

Special Student Scheduling Request

Counselor X. Faculty REQUEST for N. Student

to be in room 2532 for a total of 1 modules.

MON (TUE) WED THU FRI (1 2 3 4 5 6 7 8) 9 10 11 12 13 14 15 [after]

Purpose Make-up test.

Signed A. Teacher

FIGURE 6. Student's weekly schedule form ready for making lab decisions.

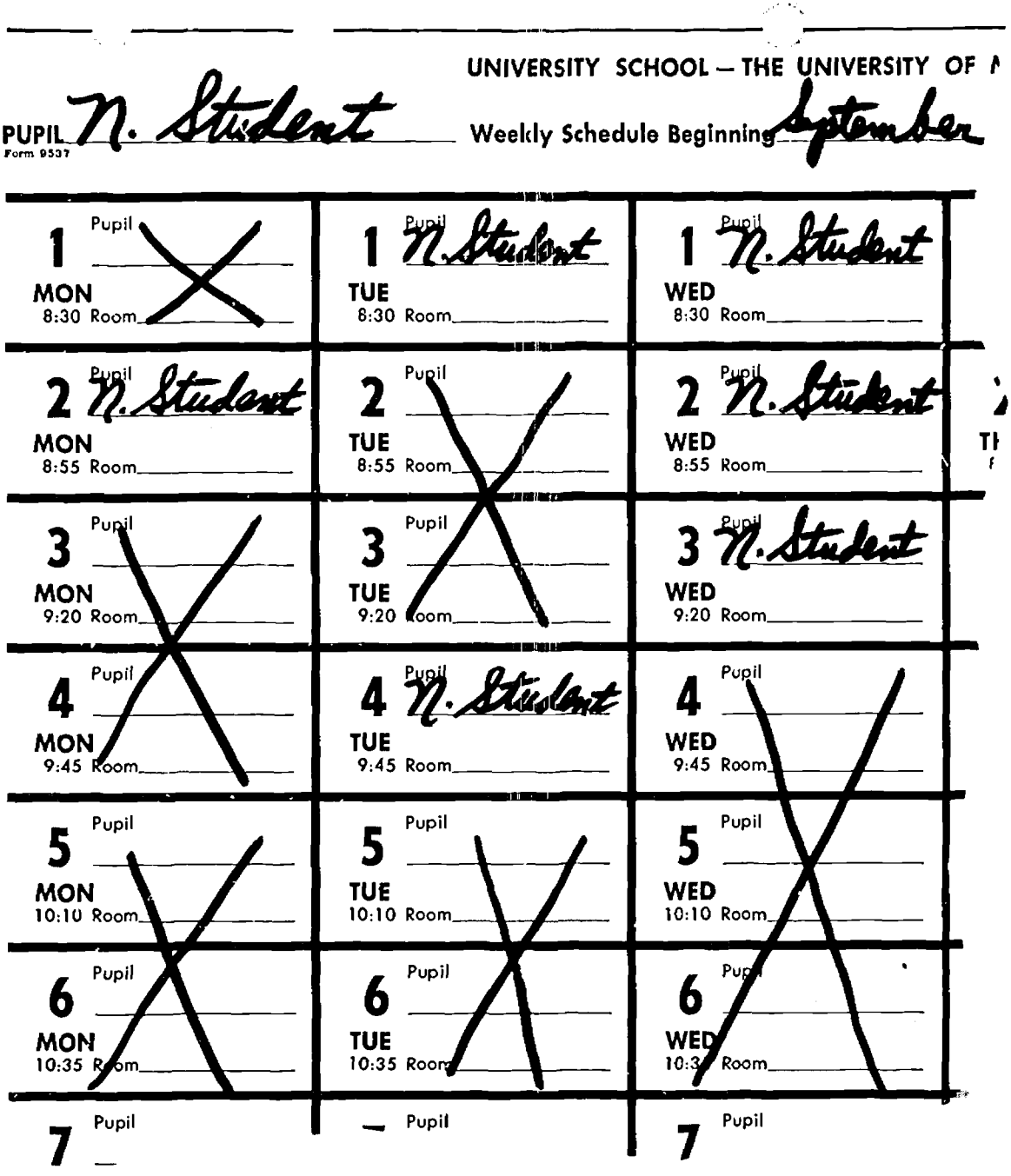


FIGURE 7. Student's weekly schedule form after lab decisions are entered.

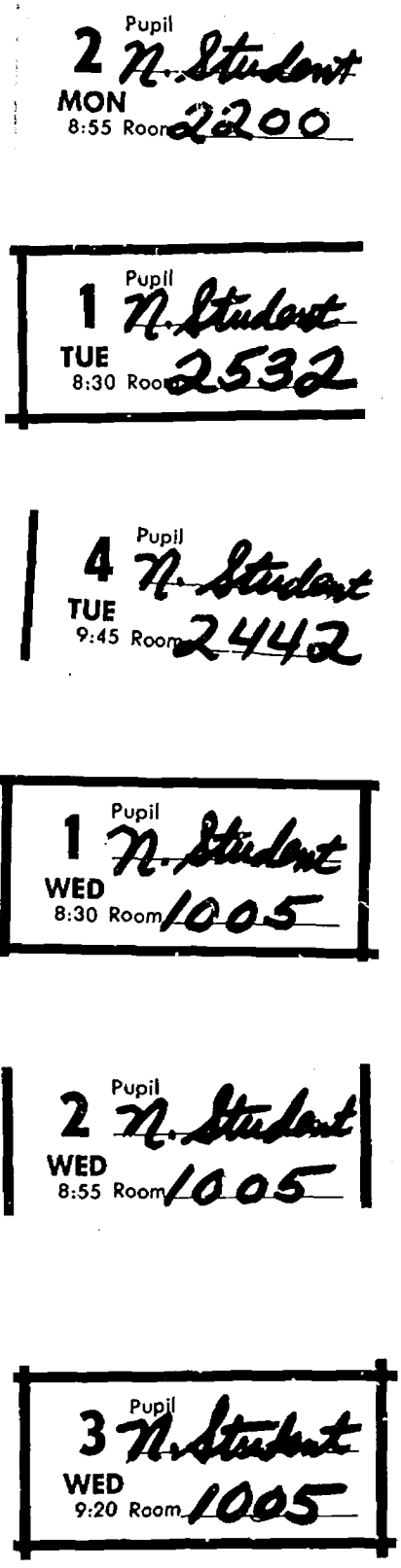
UNIVERSITY SCHOOL — THE UNIVERSITY OF M

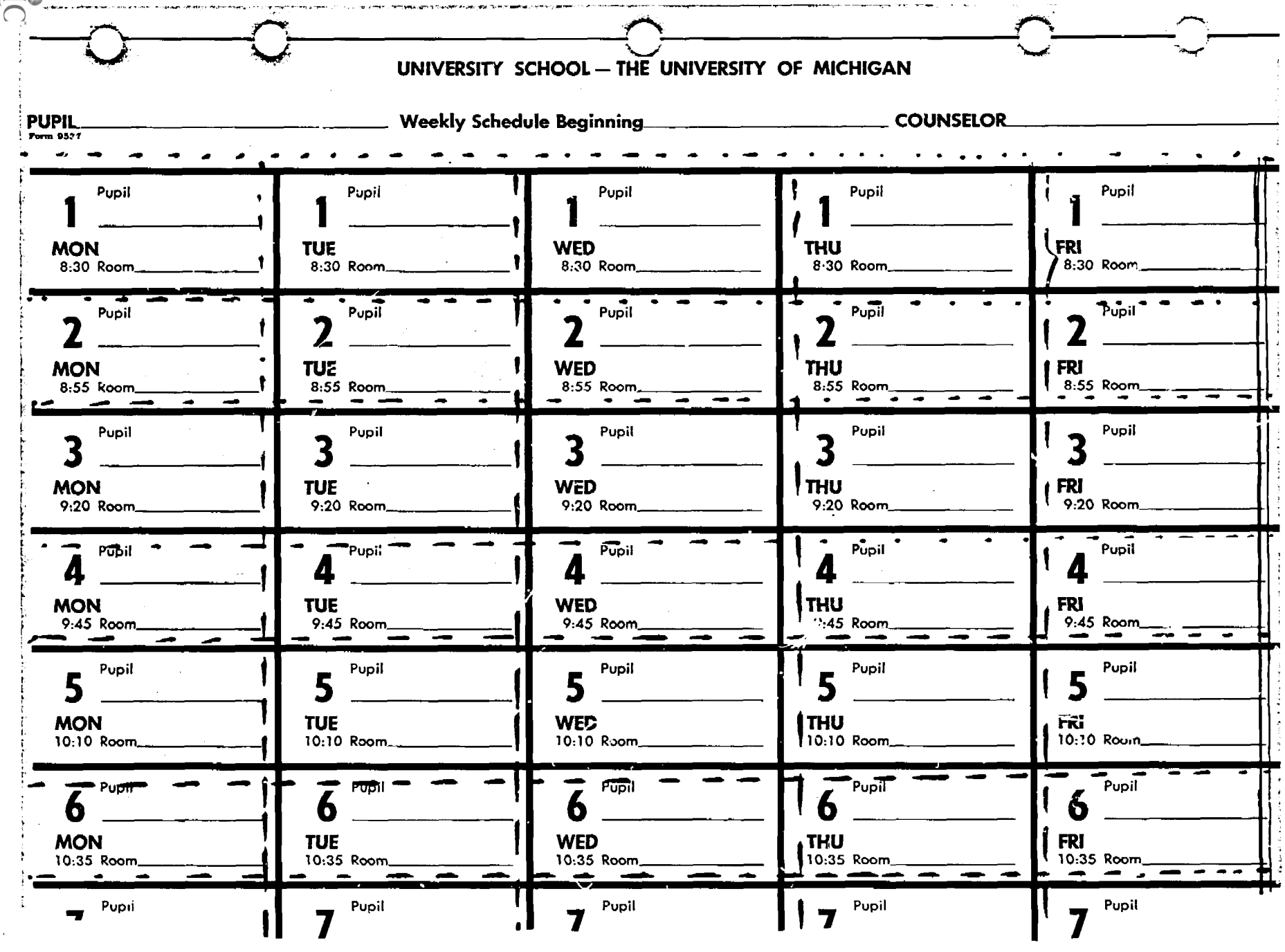
PUPIL N. Student Weekly Schedule Beginning September

Form 9537

1 Pupil MON 8:30 Room X	1 Pupil N. Student TUE 8:30 Room 2532	1 Pupil N. Student WED 8:30 Room 1005	
2 Pupil N. Student MON 8:55 Room 2200	2 Pupil TUE 8:55 Room X	2 Pupil N. Student WED 8:55 Room 1005	TI 8
3 Pupil MON 9:20 Room X	3 Pupil TUE 9:20 Room X	3 Pupil N. Student WED 9:20 Room 1005	
4 Pupil MON 9:45 Room X	4 Pupil N. Student TUE 9:45 Room 2442	4 Pupil WED 9:45 Room X	TH 9:4
5 Pupil MON 10:10 Room X	5 Pupil TUE 10:10 Room X	5 Pupil WED 10:10 Room X	
6 Pupil MON 10:35 Room X	6 Pupil TUE 10:35 Room X	6 Pupil WED 10:35 Room X	
7 Pupil	Pupil	Pupil	

FIGURE 8. Top sheet of student's weekly schedule sheet torn into module slips.





UNIVERSITY SCHOOL — THE UNIVERSITY OF MICHIGAN

PUPIL _____ Weekly Schedule Beginning _____ COUNSELOR _____

Form 9527

1 Pupil _____ MON 8:30 Room _____	1 Pupil _____ TUE 8:30 Room _____	1 Pupil _____ WED 8:30 Room _____	1 Pupil _____ THU 8:30 Room _____	1 Pupil _____ FRI 8:30 Room _____
2 Pupil _____ MON 8:55 Room _____	2 Pupil _____ TUE 8:55 Room _____	2 Pupil _____ WED 8:55 Room _____	2 Pupil _____ THU 8:55 Room _____	2 Pupil _____ FRI 8:55 Room _____
3 Pupil _____ MON 9:20 Room _____	3 Pupil _____ TUE 9:20 Room _____	3 Pupil _____ WED 9:20 Room _____	3 Pupil _____ THU 9:20 Room _____	3 Pupil _____ FRI 9:20 Room _____
4 Pupil _____ MON 9:45 Room _____	4 Pupil _____ TUE 9:45 Room _____	4 Pupil _____ WED 9:45 Room _____	4 Pupil _____ THU 9:45 Room _____	4 Pupil _____ FRI 9:45 Room _____
5 Pupil _____ MON 10:10 Room _____	5 Pupil _____ TUE 10:10 Room _____	5 Pupil _____ WED 10:10 Room _____	5 Pupil _____ THU 10:10 Room _____	5 Pupil _____ FRI 10:10 Room _____
6 Pupil _____ MON 10:35 Room _____	6 Pupil _____ TUE 10:35 Room _____	6 Pupil _____ WED 10:35 Room _____	6 Pupil _____ THU 10:35 Room _____	6 Pupil _____ FRI 10:35 Room _____
7 Pupil	7 Pupil	7 Pupil	7 Pupil	7 Pupil

FIGURE 9. Dotted lines illustrate identifying perforation system.

FIGURE 10. How system of varying perforations avoids misplaced slips.

Note that all even-numbered module slips have no borders at top or bottom, but that all odd-numbered slips have borders at top and bottom:

	EVEN	ODD
Furthermore, MONDAY's slips have no borders at right or left:	14 Pupil _____ MON 2:20 Room_____	15 Pupil _____ MON 2:45 Room_____
TUESDAY's slips have a border at the left side only:	14 Pupil _____ TUE 2:20 Room_____	15 Pupil _____ TUE 2:45 Room_____
WEDNESDAY's slips have borders at both right and left sides:	14 Pupil _____ WED 2:20 Room_____	15 Pupil _____ WED 2:45 Room_____
THURSDAY's slips have a border at the right side only:	14 Pupil _____ THU 2:20 Room_____	15 Pupil _____ THU 2:45 Room_____
And FRIDAY's slips have a double border at the right only:	14 Pupil _____ FRI 2:20 Room_____	15 Pupil _____ FRI 2:45 Room_____

Since these variations in perforations provide for a variation in the size of the slips, as well as in the placement of borders, a misplaced slip usually is quite obvious. The printing of such a form should be entrusted to a print shop equipped to handle careful perforations. Full printing specifications for the printing of the University School form may be had on request.

FIGURE 11-A. Absence form for fixed-schedule classes.

UNIVERSITY SCHOOL

ABSENCE/TARDINESS REPORT — Teacher *A. Teacher*

MON (TUE) WED THU FRI — 1 2 3 4 (5 6) 7 8 9 10 11 12 13 14 15

Student A	(A) T	______	A T
Student F	(A) T	______	A T
Student G	A (T) 5	______	A T

FIGURE 11-B. Sample absence report.

ABSENCE REPORT
Date, 19—

	1	2	3	4	5	6	7	8	9	10	11 (etc.)
Student A	a	a	a	a	a	a	a	a	a	a	a
Student B	a	a	t								
Student C					t			a	a	a	a
Student D		a			t						
Student E	t										
Student F	a	a	a	a	a	a	a	a	a	a	a
Student G		a			t				a	a	a
Student H	a	a	a	a	a			a	a	a	a

etc.

A Report of
The Teacher-Student Evaluation of the Modular Schedule
University Junior High School
University of Michigan

The Modular Evaluation Committee (James Bierden, Paula Leidich, Kathleen Ross, Gene Scholes and June Wilson) has compiled the data from the questionnaire which was administered as a pre-test in late October. Designed in an effort to determine teacher and student attitudes toward the modular schedule, the questionnaire was constructed by the Committee after several meetings with the junior high faculty and other interested persons. The results of this survey are on the following pages with a general summary at the end.

In analyzing the responses to the questionnaire, the raw data was first placed on a data matrix indicating seventh, eighth and ninth grades and faculty responses to the fifty items in terms of the Lickert scale of strongly agree, mildly agree, no decision, mildly disagree and strongly disagree. The numbers of responses were then clustered at both ends of the scale to each item in terms of agreement, disagreement and uncommitted. At least a 50% majority of any group was needed to categorize that group's attitudes regarding any single item. If there was not a 50% majority agreeing or disagreeing with an item, then the attitudes were categorized as uncommitted.

The next three pages indicate the results of this clustering and categorizing in relation to each of the fifty items. By using this method of presenting the data, it is hoped that one can readily determine how the majority of any grade level or the faculty responded to any item on the questionnaire.

RESPONSE PATTERNS

_____ 1. Students like the modular schedule because they feel more involved in their own education. (7,8,9,F - Agree)

_____ 2. The modular schedule does not give the student enough time to plan his schedule. (7,8,9,F - Disagree)

_____ 3. The teacher reacts differently to students in class than in lab. (7,9,F-Agree; 8 uncommitted)

_____ 4. I expected to have more free time in the modular schedule than I actually do have. (7,8,9, - Disagree; F uncommitted)

_____ 5. A student learns more in a class that he likes than in a class he doesn't like. (7,8,9,F - Agree)

_____ 6. Many students do not use their unscheduled time for subject-related activities. (9,F - Agree; 7,8, uncommitted)

_____ 7. Once you find a good schedule, it is silly to change it. (8,9, - uncommitted; 7,F - Disagree)

_____ 8. Students learn more in class than in lab. (9 - Agree; 7,8,F - uncommitted)

_____ 9. Having a lab for only one module is not worthwhile in most subject areas. (9 - Agree; 7,F - uncommitted; 8 - Disagree)

_____10. A student learns more in a class that meets at the same time each day of the week than in one that meets at different times during the week. (7,8,9,F - Disagree)

_____11. Students take advantage of the modular schedule to waste time. (9-uncommitted; 7,8,F - Disagree)

_____12. Laboratory periods are a good opportunity to do homework. (7,8,9,F - Agree)

_____13. Teachers are more helpful in lab than in class. (7,8,9,F - Agree)

_____14. There is not enough scheduled time for the teachers to cover all the material that the students should know. (7,9 - uncommitted; 8,F - Disagree)

_____15. A student spends more lab time on a subject he likes than on a subject he dislikes. (7,8,F - Agree; 9 - uncommitted)

_____16. The modular schedule is too much of a bother to be worth the effort. (7,8,9,F - Disagree)

_____17. It helps students to plan their lab time with a friend before going to counseling period. (7,8,9,F - uncommitted)

_____18. Teachers are more helpful in class than in lab. (8,9, - uncommitted; 7,F - Disagree)

_____19. Students have opportunity in the modular schedule to participate in clubs and activities. (7,8, - Agree; 9 - uncommitted; F - Disagree)

_____20. A student spends more lab time with a teacher he likes than with a teacher he dislikes. (7,8,9,F - Agree)

_____21. Counseling takes away the freedom of choice from the student. (7,8,9,F - Disagree)

_____22. Laboratory periods are too long. (7,8,9,F - Disagree)

_____23. Students feel more like individuals in lab than in class.
(7,8,9,F - Agree)

_____24. Students should make all decisions about their use of unscheduled time.
(7,8,9, - Agree; F - Disagree)

_____25. A student spends more lab time on a subject in which he needs help than on a subject in which he does not need help.
(7,9, - Agree; 8,F - uncommitted)

_____26. The modular schedule is just another way of dividing the class hours in the day. (7,8,-uncommitted; F - Disagree)
(9-Agree;

_____27. The irregular arrangement of class times makes learning easier.
(7-Agree; 8,9,F - uncommitted)

_____28. The lab time helps to strengthen the teacher-student relationship.
(7,8,9,F - Agree)

_____29. There should be more scheduled time and less unscheduled time.
(7,8,9,F - Disagree)

_____30. A student learns more in a class with a strict teacher than in a class with a teacher who is not strict.
(9-uncommitted; 7,8,F - Disagree)

_____31. Many students seem confused with the modular schedule.
(7,8,9,F - Disagree)

_____32. The modular schedule gives the student many chances to choose his labs.
(7,8,9,F - Agree)

_____33. Teachers have an opportunity to sponsor clubs and activities in the modular schedule. (7,8,9, - Agree; F- Disagree)

_____34. There should be more unscheduled time and less scheduled time.
(9-Agree; 7,8 - uncommitted; F-Disagree)

_____35. A student learns more in a class where he can make choices than in a class where he can't make choices.
(7,8,9,F-Agree)

_____36. The modular schedule enables students to get more extra help than they might otherwise receive.
(7,8,9,F- Agree)

_____37. Labs have a variety of materials and activities for students.
(7,8,9,F - Agree)

_____38. There is enough time during lab periods for students to get the help they need.
(7,8,9,F - Agree)

_____39. A student learns more in a lab that is supervised than in a lab that is not strictly supervised.
(F-Agree; 7,8,9, uncommitted)

_____40. When a student is having difficulty with scheduling or personal problems, he is able to see the counselor for help.
(7,8,9,F - Agree)

_____41. Many students are using the modular schedule to study topics they are interested in.
(7,8,9,F - Agree)

_____42. Students work hard under the modular schedule.
(7-Agree; 8,9,F - uncommitted)

_____43. A student learns more in a class that is easy than in a class that is hard. (8-Agree; 7,9,F-uncommitted)

_____44. Teachers work hard under the modular schedule.
(F-Agree; 7,8,9, - uncommitted)

_____45. In the modular schedule, the student learns more about each subject.
(7,8, - Agree; 9,F-uncommitted)

_____46. Teachers spend most of their time in labs as a "babysitter", rather than engaged in student-related activities. (9-uncommitted; 7,8,F-Disagree)

_____47. The modular schedule is structured and inflexible for students.
(7-Agree; 8-uncommitted; 9,F-Disagree)

_____48. The modular schedule is structured and inflexible for teachers.
(7,8,9,-uncommitted; F-Disagree)

_____49. The modular schedule gives teachers more time to prepare.
(7,F-Agree; 8,9-uncommitted)

_____50. The advantages of the modular schedule out-weigh the disadvantages.
(7,8,9,F-Agree)

Summary of Results

The intent of the Modular Evaluation Committee in presenting the results of the attitude survey is chiefly to aid the faculty and administration of the junior high school in assessing and reassessing their involvement in the modular schedule in terms of the specific items on the questionnaire. By scrutinizing the response patterns on the foregoing pages, it is hoped that individual teachers will be able to draw their own conclusions in relation to their own activities and experiences with the modular schedule. However, a brief summary of results seems to be in order here.

In general, the respondents indicated that they have a favorable attitude towards the modular schedule, both philosophically and operationally. For example, a majority of all groups agreed that students feel more involved in their own educat with the modular schedule; and disagreed that counseling takes away the freedom of choice from the student. Interestingly, ninth graders deviated more often from the general response trend than did the seventh and eighth graders or the faculty. This was especially true with those items relating to laboratory time and usage. Another interesting development was that the seventh and eighth graders agreed that students have opportunity in the modular schedule to participate in clubs and activities, while the ninth graders were uncommitted and the faculty disagreed. On a similar it "Teachers have an opportunity to sponsor clubs and activities in the modular schedul all of the student groups agreed, but the faculty disagreed. Thus, there is an appa discrepancy regarding this issue.

These results of the survey raise some considerations worthy of faculty discussion: (i.e.) Why does the ninth grade seem negative in their attitudes toward certain aspects of the modular schedule?; What areas do teachers and students disagree on and why? The Modular Evaluating Committee encourages a similar analysis of the other responses according to individual interests, but cautions against overgeneralizing from the specific items on the questionnaire or basing conclusions on inconclusive evidence.

It is intended that a post-test of the questionnaire will be given near the end of the school year in an effort to facilitate comparisons and determine if there is any change in attitude toward the modular schedule. Also, statistics regarding student achievement may also be incorporated in the post analysis to see if there is any relationship between these measures and the modular schedule as implemen at the University School.